

Balancing economic development with air pollution curbs

By Carol Kelly

Balancing the goals of boosting economic development and curbing residential air pollution from goods movement may be difficult, because health effects from related environmental exposures may not be well known. Goods movement is the transport of products from their location of manufacture, harvest, or entry to final retail destination.

A guide to attaining such social equilibrium is available in a new environmental justice [case study](http://online.liebertpub.com/doi/abs/10.1089/env.2012.0016) (<http://online.liebertpub.com/doi/abs/10.1089/env.2012.0016>) by NIEHS grantees. The study, published Feb. 19 in the journal *Environmental Justice*, chronicles development and progress of THE (Trade, Health, Environment) Impact Project, a community-academic partnership formed to address health effects associated with air pollution from traffic through the massive Los Angeles and Long Beach Ports complex.

“As part of THE Impact Project, we recognized the disproportionate impacts in living near ports and goods movement facilities for lower-income, minority residents,” said [Andrea Hricko](http://keck.usc.edu/Ed ucation/Academic_Department_and_Divisions/Department_of_Preventive_Medicine/Divisions/Environmental_Health/Faculty.aspx?facid=483), (http://keck.usc.edu/Ed ucation/Academic_Department_and_Divisions/Department_of_Preventive_Medicine/Divisions/Environmental_Health/Faculty.aspx?facid=483) professor of clinical preventive medicine and director of community outreach and engagement for the NIEHS-supported Southern California Environmental Health Sciences Center at the University of Southern California (USC).

Linked Video

[Watch a video tribute to Hricko celebrating her selection as the winner of the 2012 Environmental Health Champion Award by the Physicians for Social Responsibility of Los Angeles \(03:35\).](#)

Helping residents find a voice

Turning community residents into science-savvy advocates, for reducing environmental exposures in their neighborhoods, is a notable project success. Community-based participatory research (CBPR) was used to form and train neighborhood assessment teams in understanding health effects from traffic pollution exposure and then identifying community hot spots, such as locations where children are exposed to high-volume truck traffic. After training, teams used hand-held, real-time particle counters, to measure ultrafine particle concentrations. Empowered community members took a leading role as evidence-based advocates, presenting their findings to policymakers.

“THE Impact Project put a face on the statistics, by humanizing data and helping change the debate from one solely focused on economic gains to one inclusive of mitigating health effects that disproportionately impact low-income communities of color,” said Analilia Garcia, Dr. P.H., the study’s lead author, who is now a senior community health planner in Santa Clara, Calif. “Furthermore, the regional collaboration strengthened the partnership’s work, building a stronger case for the impact of goods movement.”

“CBPR works to improve both distributive justice and also procedural justice, through which community partners get a seat at the decision-making table, and stay at the table, helping to inform decisions that affect their lives and communities,” said [Meredith Minkler, Dr.P.H.](http://sph.berkeley.edu/faculty/minkler.php), (<http://sph.berkeley.edu/faculty/minkler.php>) a co-author and professor of health and social behavior at the University of California, Berkeley, School of Public Health.

Linked Video

[Watch as Minkler describes CBPR and its power to influence public health policy \(02:46\)](#)

Founded in 2006, THE Impact Project partners — USC, Occidental College, and four community-based advocacy groups — worked together to colearn and build capacity in one of the world’s largest international trade sites.



One of THE Impact Project’s neighborhood assessment teams, called A teams, count truck traffic in a park next to a congested freeway in Long Beach, Calif. (Photo courtesy of Andrea Hricko)



Hricko, center, leads a training session with local residents, who are often Latina women whose children have asthma. (Photo courtesy of Andrea Hricko)

Collaboration among community members and scientific investigators

“THE [Impact] Project shows the value of bidirectional communication between community and scientific investigators,” said Hricko. “The community groups understand the research findings much better through our engagement, but our scientists also understand the on-the-ground environmental health risks in the community.”

Through its accomplishments and longevity, THE Impact Project has garnered local and national attention, with its members serving as advisors to, and resources for, other community organizations facing environmental injustices.

“It shows how community-based organizations can become key figures in policy debates and positive health change at a regional level, rather than just a local level,” said [Nina Wallerstein, Dr.P.H.](http://healthpolicy.unm.edu/scholars-detail/senior-fellows/nina-wallerstein-dr-ph), (<http://healthpolicy.unm.edu/scholars-detail/senior-fellows/nina-wallerstein-dr-ph>) a co-author and director of the Center for Participatory Research at the University of New Mexico.

However, THE Impact Project was dealt a blow March 7, when Los Angeles harbor commissioners approved the Southern California International Gateway, a \$500 million rail yard that could generate an estimated 22,000 port-related jobs, but also drive more air pollution toward nearby schools, parks, and low-income neighborhoods. Two community partners plan to appeal the decision to the Los Angeles city council, which has not yet approved the rail yard.

“A lesson we’ve learned from the rail yard decision is that even more work is needed to inform policymakers about environmental health research findings, as they make land use decisions,” said Hricko.

Citation: Garcia AP, Wallerstein N, Hricko A, Marquez JN, Logan A, Nasser EG, Minkler M. 2013. [THE \(Trade, Health, Environment\) Impact Project: A Community-Based Participatory Research Environmental Justice Case Study](http://online.liebertpub.com/doi/abs/10.1089/env.2012.0016). (<http://online.liebertpub.com/doi/abs/10.1089/env.2012.0016>) *Environmental Justice* 6(1):17-26.

(Carol Kelly is a health communication specialist with MDB Inc., a contractor to the NIEHS Division of Extramural Research and Training.)

More about traffic-related particle pollution and health effects

The haze that forms when millions of tiny solid and liquid particles blur sunlight is a visual clue that people may be breathing particle pollution. Although these particles are created in different ways and composed of different compounds, most industrial-origin particles are generated through burning fossil fuels, such as in diesel-powered and gasoline-powered vehicles and equipment. The tiny particles in diesel exhaust can pass through the lungs into the bloodstream, carrying heavy metals, sulfates, and other chemicals.

In 1988, the International Agency for Research on Cancer (IARC), a part of the World Health Organization, classified diesel exhaust as probably carcinogenic to humans. The California Air Resources Board classified diesel as a strong cancer risk in 1998, and passed a number of regulations to reduce the public’s diesel pollution exposure from such sources as trucks, ports, and agricultural equipment. In June 2012, IARC declared that exhaust from diesel engines can cause cancer.

“The scientific evidence was compelling, and the working group’s conclusion was unanimous — diesel engine exhaust causes lung cancer in humans,” said Christopher Portier, Ph.D., chairman of the IARC working group, in a [statement](http://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf). (http://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf) “Given the additional health impacts from diesel particulates, exposure to this mixture of chemicals should be reduced worldwide.”

In addition to causing lung cancer, strong evidence shows that particle pollution can increase the risk of heart disease, and interfere with lung development and function. A growing body of [evidence](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2920937/) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2920937/>) suggests breathing pollution from heavy traffic may cause asthma in children. Nearly six million people in the United States live in an area with unhealthy year-round levels of particle pollution, according to the American Lung Association’s 2012 State of the Air report.

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